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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,041	06/20/2001	Frampton E. Ellis III	P 0279404 GNC16 CON1	3126

47604 7590 01/30/2007
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EXAMINER

REILLY, SEAN M

ART UNIT	PAPER NUMBER
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2153

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/884,041	Applicant(s) ELLIS	
	Examiner Sean Reilly	Art Unit 2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 130-249 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 130-249 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/13/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application has been assigned to another Examiner.

This Office action is in response to Applicant's amendment and request for reconsideration filed on April 11, 2006 and the 105 response filed on October 2, 2006. Claims 130-249 are presented for further examination. All independent claims have been amended. This office action is made NON-FINAL due to various new grounds of rejection not directly necessitated by amendment.

Response to Arguments

In response to Applicant's request for reconsideration filed on April 11, 2006, the following factual arguments are noted:

- a. The prior art of record failed to disclose including various PC components on a single microchip.

In considering (a), Examiner respectfully disagrees with Applicant's argument. Applicant contends that Slater failed to disclose placing the components of a PC onto a single microchip merely because this discussion of Slater is with regard to embedded microprocessors and not desktop computers (see inter alia, Applicant's arguments April 11, 2006, pg 27). Examiner disagrees with this rationale. Foremost, each of Applicant's independent claims recite *a personal computer* that is later defined by Applicant in various dependent claims as anyone of a handheld PDA, a wearable computer, a television, a digital set-top control box, a video game, a

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video cam, a CD or DVD player, a radio, a camera, a household electronic device, or a business electronic device, or any combination thereof (see inter alia dependent claim 163). All of these devices are known in the art are to be embedded devices. Thus, in view of Applicant's own characterization, a personal computer is analogous to Slater's embedded microprocessor systems discussed on pgs 42-43. Examiner simply cannot appreciate the relevance of Applicant's argument with regard to Slater given Applicant's own characterization of personal computers.

Furthermore, Examiner has provided the Steinert-Threlkeld reference as additional evidence for the system on a chip concept, wherein all components of a PC are placed onto a single chip. Steinert-Threlkeld demonstrates that this concept was well established in the industry dating back to at least 1992, well before Applicant's earliest claim for priority in 1996. Steinert-Threlkeld disclosed that the system on a chip design is extremely advantageous because it results in more speed, less weight, and less power consumption in a smaller space (see inter alia, Steinert-Threlkeld pg 2, ¶ 4). Examiner also notes that Applicant himself admits that the concept of placing all the components of a PC onto a single chip was widely known in the art at the time of Applicant's invention (See Applicant's CIP parent patent 6,732,141, Col 15, lines 34-43).

Thus, contrary to any of Applicant's assertions, one of ordinary skill in the art at the time of Applicant's invention clearly would have been motivated to integrate the components of a typical PC on a single chip, since such a design results in more speed, less weight, and less power consumption in a smaller space.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on December 13, 2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 130-246 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 120-146, the phrase the network comprising *an Internet* renders each claim indefinite. This phrase implies that there is more than one Internet however, as is widely known in the art, the term Internet only refers to a specific network of computers connected around the world. Applicant may overcome this rejection by amending the claims to recite: "a wireless network connection mechanism configured to connect the personal computer *to the Internet*" (emphasis added).

With regard to each claim that recites some component being *substantially located on the microchip*, (for instance see claim 131, the wireless network connection mechanism is substantially located on the microchip), each claim that recites such phraseology is indefinite. One of ordinary or expert skill in the art can not determine the metes and bounds of these claims

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since the criteria for determining when a component is *substantially located on a microchip* is not known.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 130-249 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Robertazzi et al. US patent 5,889,989 and further in view of

Hortensius et al., US patent 5,917,629;

Chen, US patent 5,809,190;

Wade et al., US patent 5,872,987;

Besemer, US patent 4,245,306;

Grabon, US patent 5,943,421;

Glick et al., US patent 5,283,819;

Jones et al., US patent 5,587,928;

Enmei, US patent 6,067,082;

Taaffe, US patent 4,747,139;

Kean, US patent 5,600,597;

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EDGE: Work-group Computing Report, "PC Vision: Intel unveils plans to bring PCs to vehicles."

Regenold, "A single-chip multiprocessor DSP solution for communications applications;"

O.Kremien, "Buying and Selling Computational Power over the Network;"

Slater, "The Microprocessor Today;"

Steinert-Threlkeld, "NEW BREED OF CHIP TI develops a super circuit;" and Applicant's admitted prior art.

Robertazzi teaches a system comprising a server computer (col.4 line 15-16, controller computer 103) connected to the Internet (col.1 lines 59-63); plural personal computers (col.3 lines 1-20) connected to the server computer through a network (fig.1A); the server computer having mechanism to function in shared processing operation involving at least two personal computers (col.4 lines 10-35 -load sharing).

Hortensius discloses a system for integrate a wireless network with a wired network. Hortensius discloses that wireless local area network which facilitate direct coupling of to PC's are well known in the art at the time of the invention [see col.1 lines 21-25]. It would have been obvious for one of ordinary skill in the art to use wireless network system such as that taught by Hortensius because it would have provided low cost mobile computers connection and compatibility with wired network [Hortensius col. lines 19-36].

Chen discloses that DWDM raises the communication capacity to 2.5 Gb/s without additional construction to the telecommunication infrastructure. Hence, it would have been obvious

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for one of ordinary skill in the art to use DWDM because it would have provide high communication bandwidth.

Wade teaches a computer with plural processing units and a controller to control the processing units [see abstract lines 1-5, col.1 lines 38-45]. It would have been obvious for one of ordinary skill in the art to use a computer of Wade with Robertazzi system because it would have provided large amount of processing power available for shared processing.

In the field of sharing computer resources over a network, Besemer teaches a firewall for regulating access to hardware from another computer (col.1 lines 45-59). Hence, it would have been obvious for one of ordinary skill in the art to have a firewall to protect the PC from malicious or unauthorized access.

Regenold discloses a multiprocessor including DSP processing units for communication applications (see fig.1). Regenold further teaches a semiconductor circuit with power management to save power consumption (page 439 col.2 5th paragraph). Hence, it would have been obvious in Robertazzi as modified to have at least one a DSP in the microchip so as to alleviate the main microprocessor from signal processing jobs. It would have been obvious for one of ordinary skill in the art to incorporate power management in because it would have enabled low power consumption.

Slater discusses the state of the art of microprocessor design in 1996. Slater discloses reducing system cost by integrating more functions on a chip and microprocessors are evolving toward system on a chip. Slater teaches to integrate video, graphic and other component on the same chip as the microprocessor. (See pages 42-43). Furthermore this concept of system-on-a-chip and its benefits were widely known well before 1996, dating back to at least 1992, see Steinert-Threlkeld, "NEW BREED OF CHIP TI develops a super circuit" pages 1-2 and in particular pg 2 ¶s

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3-5, "TI will be trying to squeeze onto a single chip most if not all of the contents of the main printed circuit board in a personal computer." Also Applicant himself admits that the concept of placing all the components of a PC onto a single chip was widely known in the art at the time of Applicant's invention (See Applicant's CIP parent patent 6,732,141, Col 15, lines 34-43). Hence, it would have been obvious for one of ordinary skill in the art at the time of the invention to put all components of a PC onto a microchip because it would have provided a PC that results in more speed, less weight, and less power consumption in a smaller space (see inter alia, Steinert-Threlkeld pg 2, ¶ 4). Slater further discloses uses of microprocessor in video games, automobile, and other consumer electronics.

EDGE article disclose Intel plans to integrate PC into automobile. Hence, the usage of PC in automobile and other consumer electronic devices are known at the time of the invention.

Glick teaches a multimedia computer having radio, and TV (see abstract). Jones teaches to provide PC with camera. Hence, it would have been obvious to combine the teaching of Glick and Jones to Robertazzi to provide the PC with a camera or videocam, radio, TV or other multimedia devices because it would have provided a full multimedia capable computer.

Enmei discloses a computer with various components including a GPS for determining the location of the computer relative to other user (see abstract). It would have been obvious for one of ordinary skill in the art to include a GPS transponder in the computer because it would have provided location information for emergency services and facilitating the locating of nearby computers for share processing.

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Taaffe teaches a single chip microprocessor for encryption [see col.1 lines 35-68]. It would have been obvious for one of ordinary skill in the art to incorporate an encryption component into the microchip because it would have provided integrated protection of software and data.

Kean discloses usage of FPGA in conjunction with microprocessor to provide logic function and configuration memory is known (col.2 line 40-45). Kean provides protection mechanism to prevent overwritten of the FPGA registers (col.2 lines 50-55). Hence, it would have been obvious for one of ordinary skill in the art to have Kean FPGA in PC of Robertazzi for the advantage state.

O.Kremien discloses that processing powers are a commodity that can be bought and sold. Hence, it would have been obvious to have a compensation mechanism including financial to entice PC users to participate in the shared computing.

Therefore, the references together teach:

For claims 130-133, 135, 141, 143, 153, 164-165, 169-170, 177, 184-185, 197-198, 201, 203, Robertazzi teaches personal computers (col.3 lines 1-20) connected through a network (fig.1A) configured to function in shared processing operation involving at least two personal computers (col.4 lines 10-35 -load sharing).

Robertazzi teaches connecting to the Internet or World Wide Web (col.1 lines 53-62). Robertazzi does not teach the personal computers are connected via wireless network. Hortensius discloses a system for integrate a wireless network with a wired network. Hortensius discloses that wireless local area network which facilitate direct coupling of to PC's are well known in the art at the time of the invention [see col.1 lines 21-25]. It would have been obvious for one of ordinary

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skill in the art to use wireless network system such as that taught by Hortensius because it would have provided low cost mobile computers connection and compatibility with wired network [Hortensius col. lines 19-36].

Robertazzi does not teach the personal computers having a microchip with at least one microprocessor, non-volatile memory, a DSP, and power management unit. Official notice is taken that it is well known in the art to have non-volatile memory (for example BIOS) in a PC. It is inherent that PC of Robertazzi would have had some non-volatile memory. Robertazzi discloses that various processor may be used for load sharing including super computer [see col.3 lines 1-20]. In the field of super computer, Wade teaches a computer with plural processing units and a controller to control the processing units [see abstract lines 1-5, col.1 lines 38-45]. It would have been obvious for one of ordinary skill in the art to use a computer having multiple processors, as disclosed by Wade, with Robertazzi system because it would have provided a large amount of processing power for load sharing. Furthermore one of ordinary skill in the art would understand that the number of processors required would vary based on the processing capacity required for various tasks. Thus, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include any number of processors, including 2, 4, 8, 16, 32, 64, 128, 256, 512, or 1024, as required. Furthermore it would have been obvious for one of ordinary skill in the art to provide the components of the PC on a microchip because it would have provided a compact computer system and reduced cost as discussed above with regard to Slater, Steinert-Threlkeld, and Applicant's admitted prior art.

Regenold discloses a multiprocessor including DSP processing units for communication applications (see fig.1). Hence, it would have been obvious in Robertazzi as modified to have at

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multiple DSPs as needed in the microchip so as to alleviate the main microprocessor from signal processing jobs.

Regenold further teaches a semiconductor circuit with power management to save power consumption (page 439 col.2 5th paragraph). It would have been obvious for one of ordinary skill in the art to incorporate power management in the microchip because it would have enabled lower power consumption.

For claim 134, Robertazzi teaches the PC would be idled by a PC user at sometime (col.2 lines 1-5).

For claims 138-140, Robertazzi teaches mechanism for allocating shared services (col.2 lines 15-39). The type of shared processing would have been a matter of choice and would have been readily apparent to one of ordinary skill in the art from the teaching of Robertazzi.

For claims 136-137, Robertazzi teaches personal computers (col.3 lines 1-20) connected through a network (fig. 1A) configured to function in shared processing operation involving at least two personal computers (col.4 lines 10-35 -load sharing). O.Kremien discloses that processing powers are commodity that can be bought and sold. Hence, it would have been obvious to have a compensation mechanism including financial to entice PC users to participate in the shared computing.

For claim 142, Regenold teach including RAM on the microchip (see fig. 1 of Regenold)

For claim 144, Chen teaches that DWDM provides high communication bandwidth without additional construction to the telecommunication infrastructure (see col.1 lines 29-39). Hence, it would have been obvious for one of ordinary skill in the art to use DWDM.

For claims 145 and 153, Robertazzi teaches a server (controller 103, col.4 lines 12-20).

For claim 146, Robertazzi teaches an intranet (col.3 lines 59-68 - "department").

For claims 147-149, 196, Besemer teaches firewall for regulating access to hardware from another computer (col.1 lines 45-59). Hence, it would have been obvious for one of ordinary skill in the art to have a firewall to protect the PC including access to the microprocessor from malicious or unauthorized access.

For claim 150, the limitation is not given patentable weight because it merely recites an intended use.

For claim 151, it is apparent in Robertazzi as modified that the network have greater speed than the peak processing speed of a PC (e.g. the Gigabit speed of DWDM and the processing speed of the Mhz speed of a 486 platform computer).

For claim 152, Glick teaches operating the PC via a wireless controller (fig.1).

For claims 154 and 156, Glick teaches the PC having graphic component and audio component(fig.1).

For claims 155, 180, 202, Robertazzi does not teach the PC including a modem or telephone. It is well known that PC has telephone component (e.g. modem). Enmei and Glick teach a multimedia computer having telephone component voice and data communications. Hence, it is inherent that the PC of Robertazzi would have a modem component. It would have been obvious to have a modem component because it would have enabled the user to make voice, fax calls.

As per claim 157, Slater teaches to provide PC with video component (page 43 - MPEG decoders).

As per claim 158-161, 182-183, it is well known in the art to have magnetic memory and flash BIOS memory in a PC. It would have been obvious for one of ordinary skill in the art to include a BIOS to enable boot up of the PC and magnetic memory to provide data storage.

As per claim 162, Robertazzi does not disclose a transponder. Enmei discloses a computer with various components including a GPS for determining the location of the computer relative to other user (see abstract). It would have been obvious for one of ordinary skill in the art to include a GPS transponder in the computer because it would have provided location information for emergency services and facilitating the locating of nearby computers for share processing.

As per claims 163, 186-188 Slater discloses PC moving into home as Web terminal, DVD players, video game and consumer electronic devices. (See page 41 col.1, page 44). Hence, the type of devices recited incorporating the PC would have been a matter of choice obvious to one of ordinary skill in the art.

As per claims 166-168, 171-176, official notices are taken that the limitations recited are well known in a PC and networking. The limitations recited would have been readily apparent or obvious to one of ordinary skill in the art in implementing Robertazzi as modified.

As per claims 178-179, 199, Robertazzi does not teach providing an encryption component in the microchip. Taaffe teaches a single chip microprocessor for encryption [see col.1 lines 35-68]. It would have been obvious for one of ordinary skill in the art to incorporate an encryption component into the microchip because it would have provided integrated protection of software and data.

As per claim 181, Robertazzi teaches the second computer being another PC (col.3 line 21 - computer platform)

As per claim 188, Linux is a well-known open source operating system. It would have been obvious for one of ordinary skill in the art to use Linux because is open and widely available.

As per claims 189-193, official notices are taken that the limitations recited are well known in a PC and networking. The limitations recited would have been readily apparent or obvious to one of ordinary skill in the art in implementing Robertazzi as modified.

As per claim 194, Slater discloses the PC includes an automobile (page 41 col.1). EDGE discloses integrating PC in automobile. Hence, PC in automobile, transportation and robot would have been obvious to one of ordinary skill in the art at the time of the invention.

As per claim 195, Slater discloses ASIC (page 43).

As per claim 200 and 203, Official notice is taken that it is well known in the art to have non-volatile memory (for example BIOS) in a PC. It is inherent that PC of Robertazzi would have had some non-volatile memory. In the field of sharing computer resources over a network, Grabon teaches a hardware firewall for regulating access to resources from another computer (see col. 8, lines 43-55). Hence, it would have been obvious for one of ordinary skill in the art to have a firewall to protect the PC from malicious or unauthorized access.

As per claims 204-206, 218-220, 221-223, 224-226, 227-229 they are rejected under similar rationale as for claim 130 above. It is well known in the art for PC to have flash memory (e.g. a BIOS).

As per claim 207-209, they are rejected under similar rationale as for claim 130 above. It is well known in the art to have mobile PC (e.g. PDA, etc.).

As per claim 210-212, they are rejected under similar rationale as for claim 130 above. Kean discloses usage of FPGA in conjunction with microprocessor to provide logic function and

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configuration memory is known (col.2 line 40-45). Kean provides protection mechanism to prevent overwritten of the FPGA registers (col.2 lines 50-55). Hence, it would have been obvious for one of ordinary skill in the art to have Kean FPGA in PC of Robertazzi because it would have provide programmable configuration memory with protection of data from being overwritten.

As per claim 213-217, they are rejected under similar rationale as for claim 130 above. Official notice is taken that it is well known in the art to have mobile PCs forming direct wireless connections between PCs. It would have been obvious for a user to make use of whatever network is available including direct wireless connection.

As per claim 230-249, Chen teaches wireless signal multiplexing and WDM (col.1-2).

Conclusion

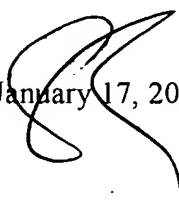
The prior art made of record, in PTO-892 form, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Reilly whose telephone number is 571-272-4228. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


January 17, 2007


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